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REGION 5**

DATE: June 16, 2011

SUBJECT: Site Visit Report, Gary Development Landfill, Gary, Indiana, June 14, 2011

FROM: James Chapman, Ph.D., Ecologist

TO: David Linneear, RPM

This memo discusses observations during a site visit to the Gary Development Landfill on June 14, 2011, and some thoughts regarding the available site data. Participants in the site visit included David Linneear and Megan McSeveney. We walked along the southern portion of the site including a portion of the wetland along the Grand Calumet River.

Early afternoon is not optimal for wildlife observation, but sightings include deer, redwinged blackbird, song sparrow, common yellowthroat (warbler), great blue heron, an unidentified dragonfly, and an unidentified butterfly.

The landfill surface is uneven and covered with dense vegetation (Figure 1). Deer bedding sites were observed. Other observations were hindered by the thick vegetation.

We walked part way into the wetland bordering the Grand Calumet River (Figure 2). The disturbed sediments where we stepped gave off a strong petroleum/solvent odor. We located the probable point of entry (PPE) of landfill discharge to the south wetland (Figure 3). The distinct orange coloration (Figure 4), probably iron oxides, is unlikely to be toxic but is an indication of discharge of anoxic leachate to the surface, which may contain other toxic substances.

On our return to the vehicle, we observed booms deployed around the Vulcan Materials Corp. outfall with an oily sheen (Figure 5), upstream of the Gary Development Landfill.

Some thoughts on data gaps are as follows. The spatial pattern of contamination in the wetland is not clear. I recommend sampling in a grid pattern in the wetland to determine extent and to differentiate contaminants released from landfill discharge from ones deposited from the river (upstream sources).

The wetland sediment samples with elevated contaminant concentrations compared to reference locations appear to be deep samples (12-24 inches below surface) including samples E2QS2, E2QR3, and E2QR4 (PAHs), and ME2QS0 (chromium). If wetland surface sediment samples do not exhibit elevated contaminant concentrations (this needs to be confirmed), it would indicate that the wetland contamination is primarily from historic landfill discharges, and that present discharges might not have elevated contaminant loads. I recommend review of the

existing wetland sediment data to confirm (or refute) whether present landfill discharge presents less risk than historic discharges.

We have seen only a portion of the southern side of the site. Historic records describe leachate seeps on other sides of the landfill. The north retention pond should also be investigated for potential risk. I recommend collection of sediment and surface water data.



Figure 1. Southern side of the Gary Development Landfill, Gary, IN, 6/14/11, facing northwest.



Figure 2. South wetland, Gary Development Landfill, Gary, IN, 6/14/11, facing southeast. The trees and shrubs in the background are on the opposite bank of the Grand Calumet River.



Figure 3. Probable Point of Entry (PPE) of landfill discharge to the wetland, Gary Development Landfill, Gary, IN, 6/14/11, facing south.



Figure 4. Close-up of the Probable Point of Entry (PPE) of landfill discharge to the wetland showing orange coloration, Gary Development Landfill, Gary, IN, 6/14/11, facing south.



Figure 5. Boom and sheen, Vulcan Materials Company outfall on the Grand Calumet River, upstream of Gary Development Landfill, Gary, IN, 6/14/11, facing south.